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ABSTRACT

This module on parts of the machine, one in a series on the single needle lockstitch sewing machine for student self-study, contains eight sections. Each section contains the following parts: an introduction, directions, an objective, learning activities, student information, student self-check, check-out activities, and an instructor's final checklist. The eight sections cover the following topics: identifying parts and their purpose, threading the machine, removing the bobbin case, winding the bobbin, replacing a wound bobbin, operating the machine, tying on thread, and measuring with a gauge or ruler. The material is illustrated with line drawings. (KC)

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ED233138

MODULE 1

THE SINGLE NEEDLE LOCKSTITCH MACHINE

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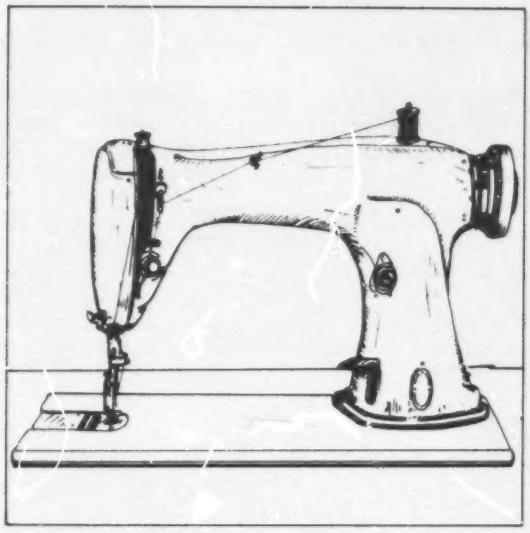
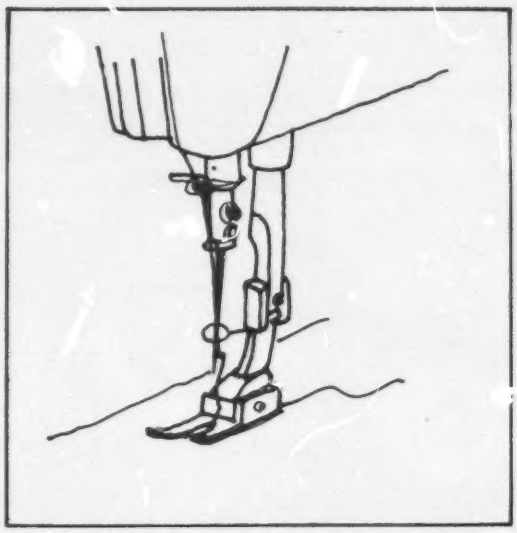




OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE
(Identifying Parts and Their Purpose)

INTRODUCTION

The single needle lockstitch machine is a self-oiling machine. The machine sits in a pan of oil which flows continuously through the machine.

The single needle lockstitch machine is power driven at a speed of 3500 to 7000 stitches per minute. It differs considerably from the domestic machine which has a speed of 1500 stitches per minute. The single needle lockstitch machine is the simplest of all industrial machines to operate. In this module you will learn to operate the machine by becoming familiar with its parts and their purpose.

DIRECTIONS

Read the Objective. If you think that you can accomplish the Objective now, turn to the Check-Out Activity and follow the instructions.

If you feel you are not able to accomplish this Objective now, look at the Learning Activities. Begin the Learning Activities and as soon as you feel you are ready, turn to the Check-Out Activity and follow the instructions.

OBJECTIVE

Given a single needle lockstitch machine, identify parts of the machine and their purpose with 100 per cent accuracy.

LEARNING ACTIVITIES

1. Read Student Information, THE SINGLE NEEDLE LOCKSTITCH MACHINE.
2. COMPLETE Student Self-Check, THE SINGLE NEEDLE LOCKSTITCH MACHINE.
3. TURN to the Check-Out Activity and follow the instructions.

STUDENT INFORMATION

The Single Needle Lockstitch Machine

The stitching of a lockstitch machine is accomplished through the use of two threads, one top and one bottom. If the machine is correctly threaded and adjusted, the stitching should appear the same on both sides of the material; thus the name of the machine, lockstitch (Figure 1).

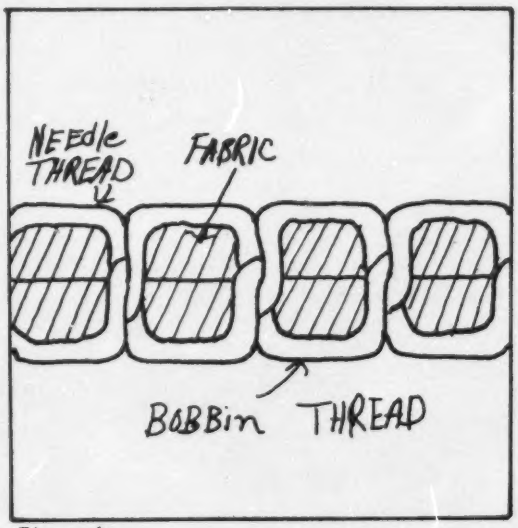


Figure 1

In industry, you will find the machine mounted on a special stand. The drawing in Figure 2 identifies some of the major parts of the machine. Look at the drawing and then read the purpose of each part as identified.

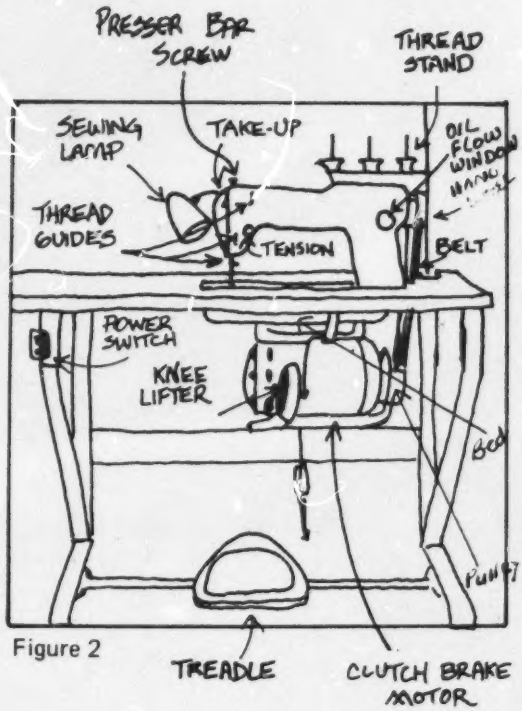


Figure 2

Table top and stand – Supports and houses the machine.

Power switch – Turns machine on and off.

Sewing lamp – Provides a light source close to the area where the operator works.

Treadle – A foot control which starts, stops, and regulates the speed of the machine.

Clutch brake motor – Motor with built in clutch which connects the machine and starts it. The built in brake stops the machine.

Knee lifter – A lever operated by knee pressure which lifts the presser foot and releases the needle thread tension.

Hand wheel – Used by the operator to position the needle (up and down) when the machine is stopped.

Belt – Sends power from motor to the pulley. Turns handwheel.

Thread stand – Posts on which thread is placed.

Oil flow window – A window through which the operator can check to see that the lubrication system is working.

Thread guides – Guide needle thread along its path.

Presser bar adjusting screw – Used to adjust pressure of the foot for smooth feeding of fabric.

Take up – A device which draws the right amount of needle thread from its supply and releases it for stitch formation. It also draws back excess thread to set the stitches.

Tension assembly – Controls pressure on thread.

Bed – Lower working surface of machine.

In Figure 3 you will see some additional machine parts.

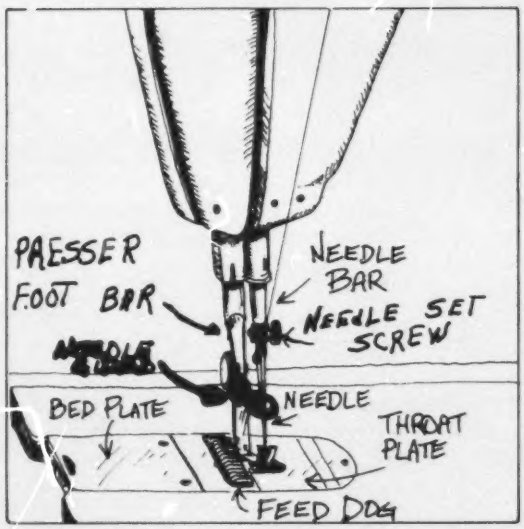


Figure 3

Presser foot – Part of machine that holds the material against the feeding surface during stitching.

Needle set screw – Holds needle in place.

Needle bar – Holds needle.

Needle – Carries thread through fabric to make stitch.

Throat plate – A plate under presser foot with hole for needle to pass through.

Feed dog – Tooth-like projections immediately under presser foot.

Parts of the bobbin are shown in Figure 4.

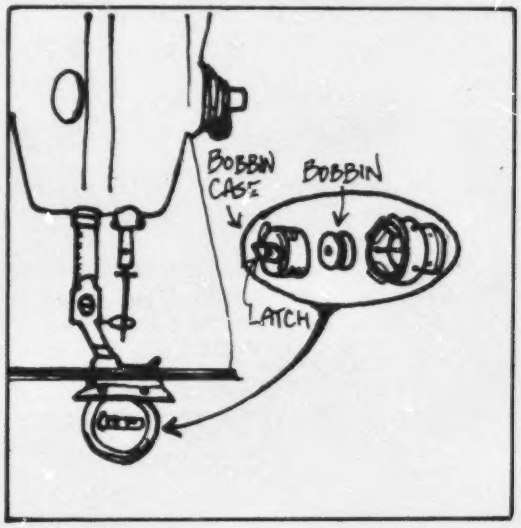


Figure 4

Bed plate – Opens for access to bobbin.

Rotary hook – A rotating part which houses the bobbin case forming the lower part of the lockstitch machine.

Bobbin – Spool which holds supply of lower thread.

Bobbin case – Container for bobbin.

Bobbin latch – Hinge on bobbin case.

Bobbin winder – A mechanism for filling bobbins automatically.

Most industrial machines are self-lubricating. If you tilt the machine back, you can determine if the reservoir has enough oil (Figure 5). Be sure the oil level does not drop too low.

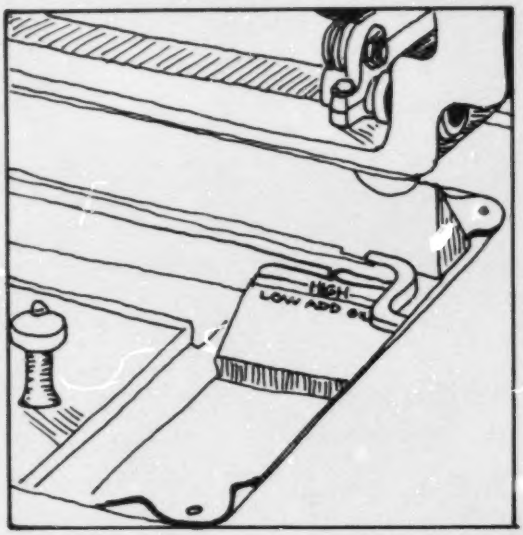


Figure 5

When the machine is running, you can observe a constant flow of oil through the oil flow window (Figure 6). Check the oil flow each time you use the machine and add oil when needed.

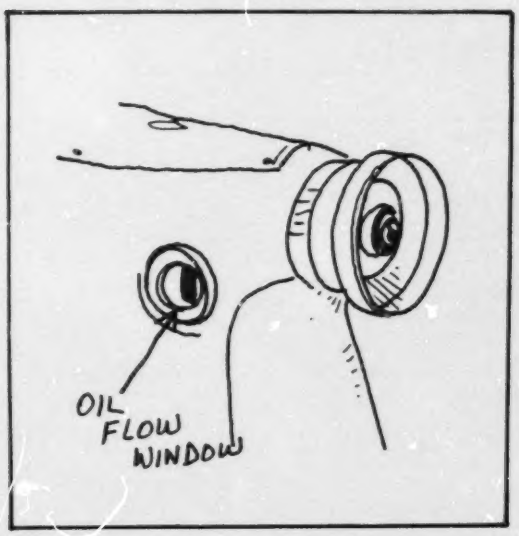


Figure 6

STUDENT SELF-CHECK

The Single Needle Lockstitch Machine

Write the answers to the following statements on a separate sheet of paper.

1. The _____ is a foot control which starts, stops and regulates the speed of the machine stitching.
2. The_____is a device which lifts the presser foot and releases the needle thread tension.
3. The hand wheel is used to position the needle. (True or false)
4. The belt sends power from the motor to the _____.
5. The oil flow window is used to pour oil into the machine. (True or false)
6. The tension assembly controls pressure on the thread. (True or false)
7. Most industrial machines are self-lubricating. (True or false)

CHECK-OUT ACTIVITIES

The statement below explains the activities you must be able to complete in order to finish this module. After you go through the activities, your instructor will rate your performance using the Instructor's Final Checklist, OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE (Identifying Parts and Their Purpose).

Your instructor will provide you with a single needle lockstitch machine or a diagram. Identify the parts of the machine and the purpose of each part.

Student _____

Date _____

Instructor's Final Checklist

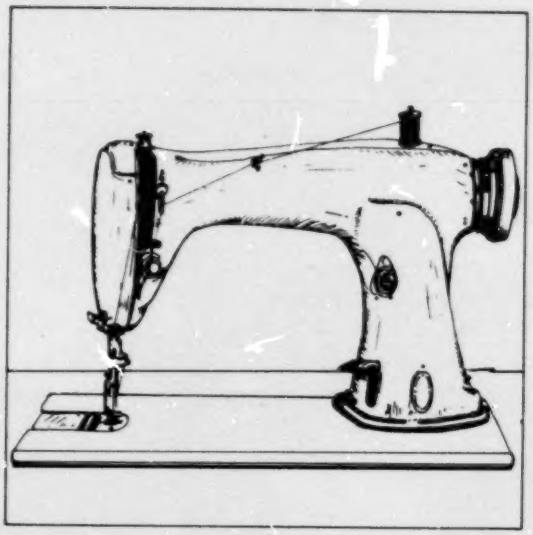
Check the student's performance in the following elements of operating a single needle lockstitch machine by identifying the parts and their purpose.

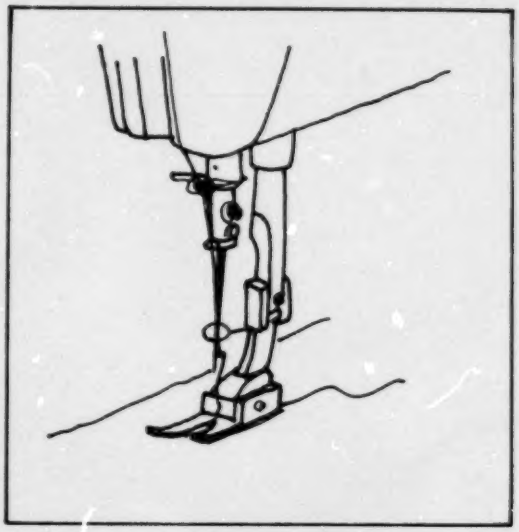
Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
The student:				
a. Identified parts of lockstitch machine.	( )	( )	( )	( )
b. Identified purpose of each part.	( )	( )	( )	( )

threading the machine





OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE

(Threading the Machine)

INTRODUCTION

The single needle lockstitch machine is a self-oiling machine. The machine sits in a pan of oil which flows continuously through the machine.

The single needle lockstitch machine is power driven at a speed of 3500 to 7000 stitches per minute. It differs considerably from the domestic machine which has a speed of 1500 stitches per minute. The single needle lockstitch machine is the simplest of all industrial machines to operate. In this module you will learn to operate a single needle lockstitch by threading the machine.

DIRECTIONS

Read the Objective. If you think that you can accomplish this Objective now, turn to the Check-Out Activity and follow the instructions.

If you feel you are not able to accomplish this Objective now, look at the Learning Activities. Begin the Learning Activities and as soon as you feel you are ready, turn to the Check-Out Activity and follow the instructions.

OBJECTIVE

Given a single needle lockstitch machine, thread, and owner's manual, thread the machine according to manufacturer's specifications.

LEARNING ACTIVITIES

1. READ Student Information, THREADING THE MACHINE. Follow directions and complete each step before going on to the next one. If you should have a problem, ask your instructor for assistance. Practice threading the machine until you can thread it correctly and without assistance.

2. COMPLETE Student Self-Check, THREADING THE MACHINE.

3. Turn to the Check-Out Activity and follow the instructions.

STUDENT INFORMATION

Threading the Machine

Figure 7 shows a diagram for threading a lockstitch machine. This illustration is similar to the Singer brand.

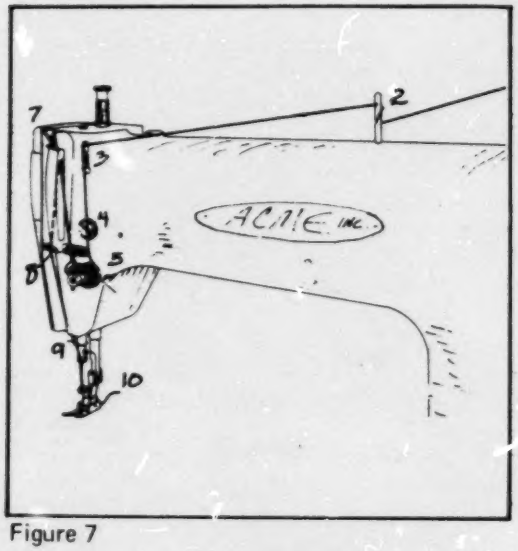


Figure 7

Make sure power is turned off; then proceed with the following steps to thread the machine.

1. Turn hand wheel so that needle is at highest point.

2. Place thread through holes in spool pin.

3. Draw thread through thread retainer guide (No. 3).

4. Depress knee lifter to open tension discs.

5. Place thread between discs of tension assembly and over check spring (Figure 8). If incorrectly placed, the stitches will look correct on top but not underneath.

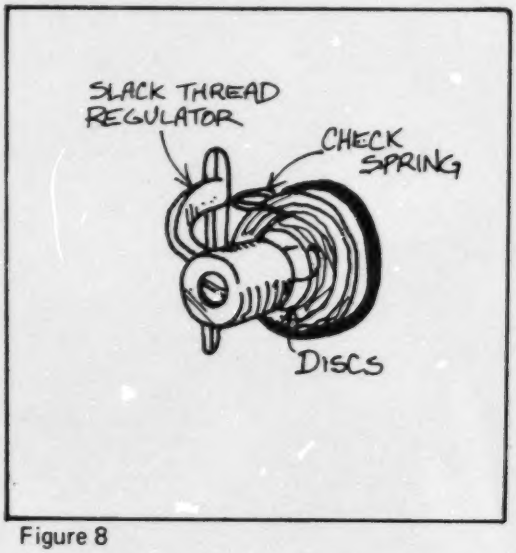


Figure 8

6. Place thread under slack thread regulator. If properly placed, the stitches will be accurate.

7. Pull thread up through take up eyelet (Figure 7).

8. Pull thread through needle bar guide.

9. Depress knee lifter to release needle tension guide.

10. Thread end should be snipped clean with scissors before inserting in needle. Be sure that no "whiskers" are on end of snipped thread. Draw thread through eye needle (Figure 9) from left to right or from outside to inside of needle.

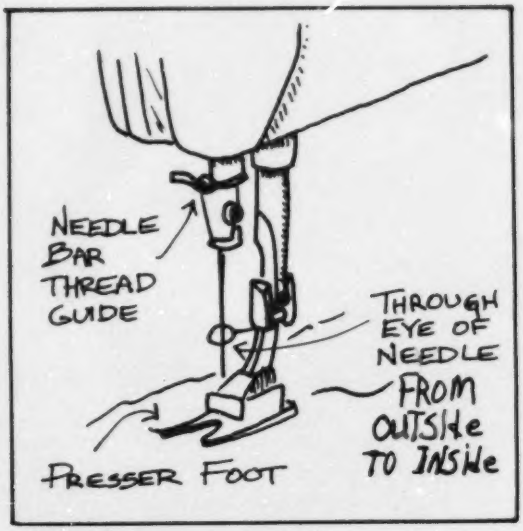


Figure 9

The needle is threaded from the long groove side to the short groove side. The thread is then drawn through the presser foot to the back of the machine (Figure 10). The long groove side is on the left or outside of the needle.

Figure 10

STUDENT SELF-CHECK

Threading the Machine

Write the answers to the following statements on a separate sheet of paper.

1. Thread must be in position on stand. (True or false)
2. Spool pin carries the thread from the cone to the _____ .
3. Slack thread regulator helps make stitches accurate. (True or false)
4. Thread must be carried between discs of _____ and over check spring.
5. Machine threads left to right through the _____ side of needle.

CHECK-OUT ACTIVITIES

The statement below explains the activities you must be able to complete in order to finish this module. After you go through the activities, your instructor will rate your performance using the Instructor's Final Checklist, OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE (Threading the Machine).

Your instructor will provide you with a single needle lockstitch machine, owner's manual, thread, and material. Thread the machine properly.

Student _____

Date _____

Instructor's Final Checklist

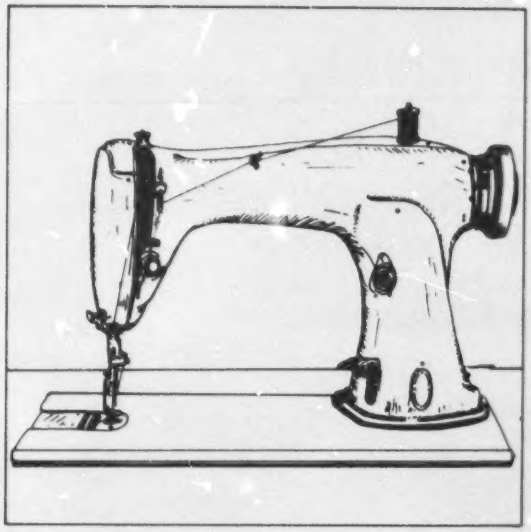
Check the student's performance in the following elements of operating a single needle lockstitch machine (threading the machine).

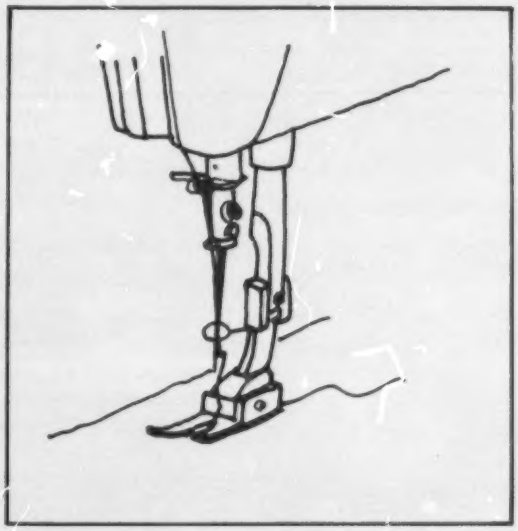
Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
The student:				
Threaded machine according to manufacturer's specifications.	( )	( )	( )	( )

removing the bobbin case





OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE

(Removing the Bobbin Case)

INTRODUCTION

The single needle lockstitch machine is a self-oiling machine. The machine sits in a pan of oil which flows continuously through the machine.

The single needle lockstitch machine is power driven at a speed of 3500 to 7000 stitches per minute. It differs considerably from the domestic machine which has a speed of 1500 stitches per minute. The single needle lockstitch machine is the simplest of all industrial machines to operate. In this module you will learn to operate a single needle lockstitch machine by removing the bobbin case.

DIRECTIONS

Read the Objective. If you think that you can accomplish this Objective now, turn to the Check-Out Activity and follow the instructions.

If you feel you are not able to accomplish this Objective now, look at the Learning Activities. Begin the Learning Activities and as soon as you feel you are ready, turn to the Check-Out Activity and follow the instructions.

OBJECTIVE

Given a single needle lockstitch machine, remove the bobbin case and bobbin for rewinding. The bobbin should be free of the case and the task should be performed without the operator changing positions.

LEARNING ACTIVITIES

1. READ Student Information, REMOVING THE BOBBIN CASE. Follow directions and complete each step before going on to the next one. If you should have a problem, ask your instructor for assistance. Practice removing the bobbin case until you can remove it correctly and without assistance.

2. COMPLETE Student Self-Check, REMOVING THE BOBBIN CASE.

3. TURN to the Check-Out Activity and follow the instructions.

STUDENT INFORMATION

Removing the Bobbin Case

These are the steps to follow when removing the bobbin from an industrial sewing machine.

1. Make sure the power is off.
2. Apply slight toe pressure to treadle to release clutch.
3. Turn hand wheel to bring needle bar to its highest point.
4. Remove feet from treadle.
5. Reach beneath bed of machine with left hand. Open latch of bobbin case and pull case free from the center post of the hook (Figure 11).
6. Release the latch above machine. The bobbin will drop out into your right hand.
7. Examine bobbin case for lint or dirt. Clean with brush if necessary.
8. Remove any leftover thread from the bobbin before rewinding.

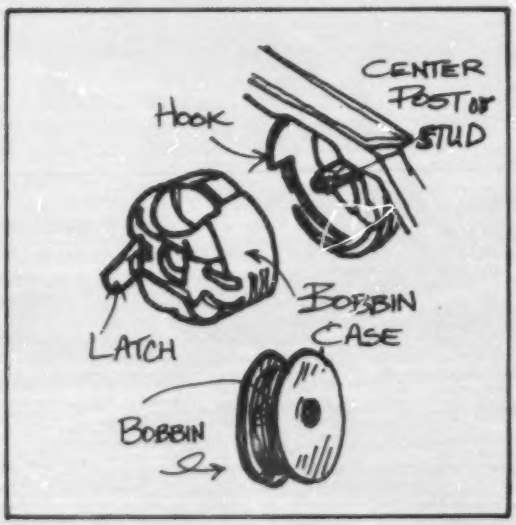


Figure 11

STUDENT SELF-CHECK

Removing the Bobbin Case

Write the answers to the following statements on a separate sheet of paper.

1. Power should be _____ to remove bobbin case.
2. Use toe pressure on treadle to release clutch. (True or false)
3. The hand wheel is used to bring needle to _____ point.
4. Use _____ hand to remove bobbin case from machine.
5. Open latch to remove bobbin case. (True or false)
6. Release latch to remove bobbin. (True or false)
7. Dirt and lint do not get in the bobbin case. (True or false)
8. All leftover thread must be removed from bobbin case. (True or false)

CHECK-OUT ACTIVITIES

The statement below explains the activities you must be able to complete in order to finish this module. After you go through the activities, your instructor will rate your performance using the Instructor's Final Checklist, OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE (Removing the Bobbin Case).

Your instructor will provide you with a single needle lockstitch machine, owner's manual, thread, and material. Remove the bobbin case from the machine.

Student _____

Date _____

Instructor's Final Checklist

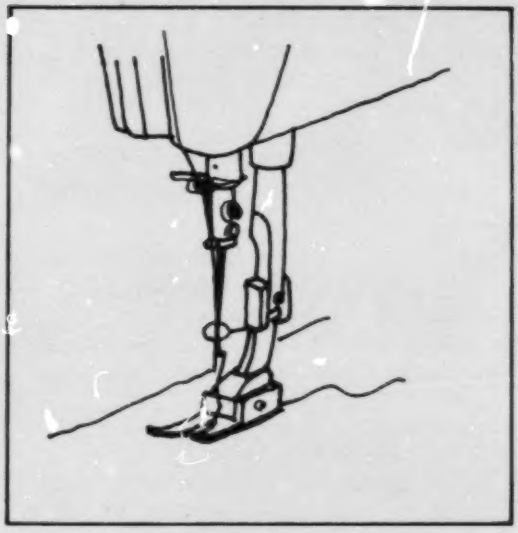
Check the student's performance in the following elements of operating a single needle lockstitch machine (removing the bobbin case).

Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
The student:				
a. Removed bobbin case and bobbin.	( )	( )	( )	( )
b. Removed dirt and lint from bobbin case.	( )	( )	( )	( )
c. Removed excess thread from bobbin.	( )	( )	( )	( )
d. Released latch to remove bobbin.	( )	( )	( )	( )
e. Returned bobbin and case satisfactorily.	( )	( )	( )	( )

winding the bobbin



OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE
(Winding the Bobbin)

INTRODUCTION

The single needle lockstitch machine is a self-oiling machine. The machine sits in a pan of oil which flows continuously through the machine.

The single needle lockstitch machine is power driven at a speed of 3500 to 7000 stitiches per minute. It differs considerably from the domestic machine which has a speed of 1500 stitches per minute. The single needle lockstitch machine is the simplest of all industrial machines to operate. In this module you will learn to operate a single needle lockstitch machine by winding the bobbin.

DIRECTIONS

Read the Objective. If you think that you can accomplish this Objective now, turn to the Check-Out Activity and follow the instructions.

If you feel you are not to accomplish this Objective now, look at the Learning Activities. Begin the Learning Activities and as soon as you feel you are ready, turn to the Check-Out Activity and follow the instructions.

OBJECTIVE

Given thread and machine-mounted bobbin winder, wind the bobbin as the machine operates. The bobbin should be wound evenly to capacity. The thread should be even with or slightly lower than the sides of the bobbin.

LEARNING ACTIVITIES

1. READ Student Information, WINDING THE BOBBIN. Follow directions and complete each step before going on to the next one. If you should have a problem, ask your instructor for assistance. Practice winding the bobbin until the thread is even or slightly lower than the sides of the bobbin.

2. COMPLETE Student Self-Check, WINDING THE BOBBIN.

3. TURN to the Check-Out Activity and follow the instructions.

STUDENT INFORMATION

Winding The Bobbin

Following are the steps to follow when winding the bobbin on a machine-mounted bobbin winder.

1. Remove any leftover thread on the bobbin. Place bobbin on shaft.
2. Adjust bobbin winder to determine amount of thread to be wound on bobbin (Figure 12).
3. Feed thread over thread guide on top of spool stand and through hole.
4. Pull thread between tension discs emerging at point, keeping thread taut.
5. Push lever forward. If thread doesn't spread evenly when machine is in operation, loosen screw and turn tension bracket in either direction until thread winds evenly.

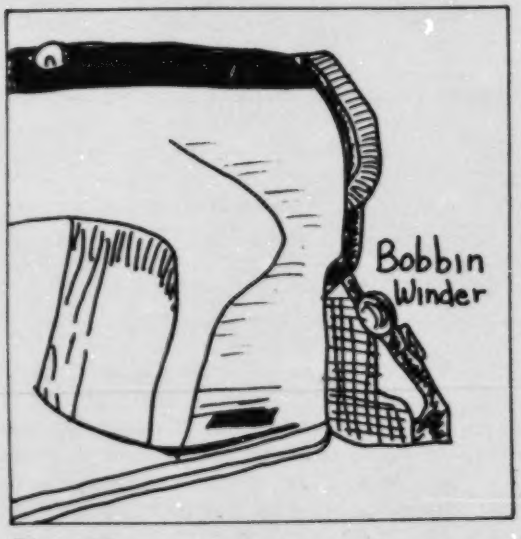


Figure 12

STUDENT SELF-CHECK

Winding the Bobbin

Write the answers to the following statements on a separate sheet of paper.

1. All leftover thread is removed from _____.
2. Machine does not have to be _____ after each winding of the bobbin.
3. The thread to the bobbin must go through the _____ disc to fill properly.

CHECK-OUT ACTIVITIES

The statement below explains the activities you must be able to complete in order to finish this module. After you go through the activities, your instructor will rate your performance using the Instructor's Final Checklist, OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE (Winding the Bobbin).

Your instructor will provide you with a single needle lockstitch machine and thread. Wind the bobbin properly.

Student _____

Date _____

Instructor's Final Checklist

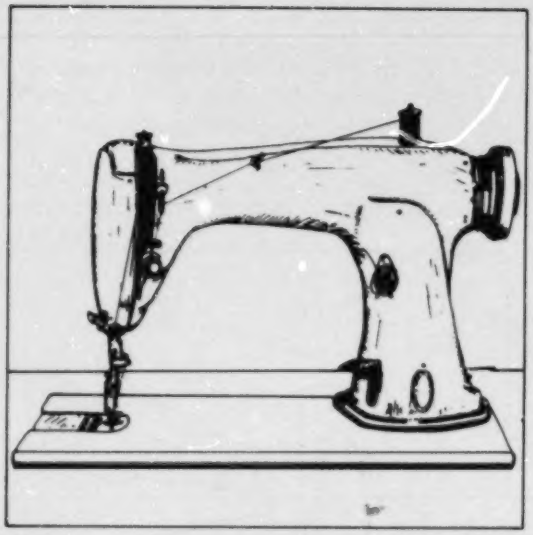
Check the student's performance in the following elements of operating a single needle lockstitch machine (winding the bobbin).

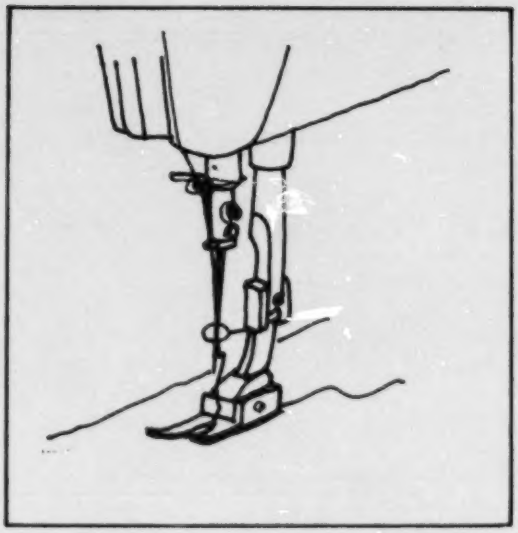
Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
The student:				
a. Wound the bobbin with thread even with or slightly lower than sides of the bobbin.	( )	( )	( )	( )
b. Threaded bobbin winder correctly.	( )	( )	( )	( )

replacing a wound bobbin





OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE

(Replacing A Wound Bobbin)

INTRODUCTION

The single needle lockstitch machine is a self-oiling machine. The machine sits in a pan of oil which flows continuously through the machine.

The single needle lockstitch machine is power driven at a speed of 3500 to 7000 stitches per minute. It differs considerably from the domestic machine which has a speed of 1500 stitches per minute. The single needle lockstitch machine is the simplest of all industrial machines to operate. In this module you will learn to operate a single needle lockstitch machine by replacing a wound bobbin.

DIRECTIONS

Read the Objective. If you think that you can accomplish this Objective now, turn to the Check-Out Activity and follow the instructions.

If you feel you are not able to accomplish this Objective now, look at the Learning Activities. Begin the Learning Activities and as soon as you feel you are ready, turn to the Check-Out Activity and follow the instructions.

OBJECTIVE

Given a single needle lockstitch machine, replace a wound bobbin in the case and bring up the bobbin thread. Upon replacement, the case should be secure with the bobbin rotating freely in a counter clockwise direction to the open side of the case. Both bobbin and machine thread ends should be free and located to the rear and under the presser foot.

LEARNING ACTIVITIES

1. READ Student Information, REPLACING A WOUND BOBBIN. Follow directions and complete each step before going on to the next one. If you should have a problem, ask your instructor for assistance. Practice replacing a bobbin so that bobbin and machine thread ends are free and located to the rear and under the presser foot.

2. COMPLETE Student Self-Check, REPLACING A WOUND BOBBIN.

3. TURN to the Check-Out Activity and follow the instructions.

STUDENT INFORMATION

Replacing a Wound Bobbin

1. Hold the bobbin case with slot near top.
2. Place rewound bobbin in case with thread unwinding in a counter clockwise direction to the open side of the case (Figure 13).

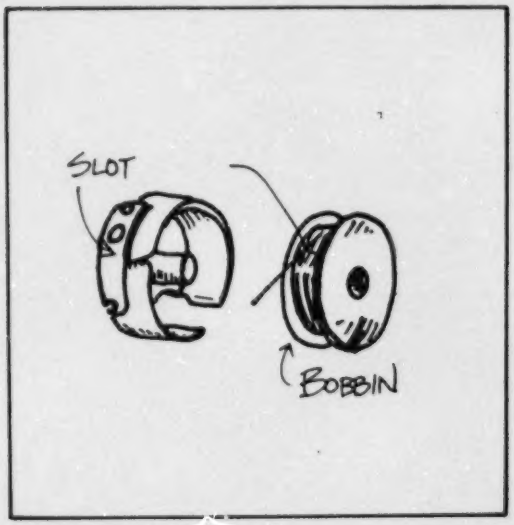


Figure 13

3. Pull thread into bobbin case slot.
4. Draw thread down and under case spring.
5. Turn bobbin case over. Draw thread up and into delivery eye, leaving about 4 inches (10 cm) of thread outside the case.
6. Hold bobbin case latch open. Replace the case on the center post of the hook.
7. Release latch, making sure that loose thread end is free.
8. Press case back until latch catches in groove on post with a click.
9. Grasp end of needle thread with left hand.
10. Release clutch with treadle by slight toe pressure.
11. Turn hand wheel in the direction that the machine runs (counter clockwise) until needle has gone down, come up, and returned to the highest point.
12. Pull needle thread until a loop of bobbin thread appears (Figure 14).

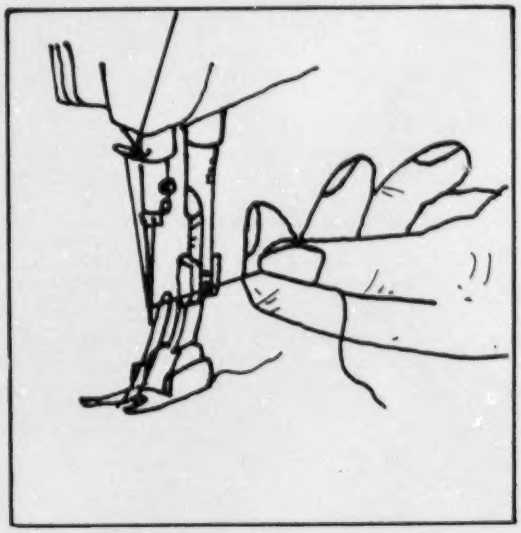


Figure 14

13. Grasp bobbin loop and pull until end is free.
14. Place both thread ends to the rear and under presser foot.

STUDENT SELF-CHECK

Replacing a Wound Bobbin

Write the answers to the following statements on a separate sheet of paper.

1. The bobbin has to fit into the case so as to pull thread through ____ in bobbin case.

2. Bobbin thread should be about ___ inches long and left hanging below bobbin case.

3. _____should be released to replace bobbin in machine.

4. Bobbin case must go into slot and____ on post into proper position.

5. Hold needle thread with left hand and turn hand wheel _____for needle to go down and catch bobbin thread.

6. Pull needle thread and bobbin thread up (returning needle to highest point). Pull both threads to the ____of presser foot.

CHECK-OUT ACTIVITIES

The statement below explains the activities you must be able to complete in order to finish this module. After you go through the activities, your instructor will rate your performance using the Instructor's Final Checklist, OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE (Replacing a Wound Bobbin).

Your instructor will provide you with a single needle lockstitch machine and owner's manual. Replace the bobbin properly.

Student _____

Date _____

Instructor's Final Checklist

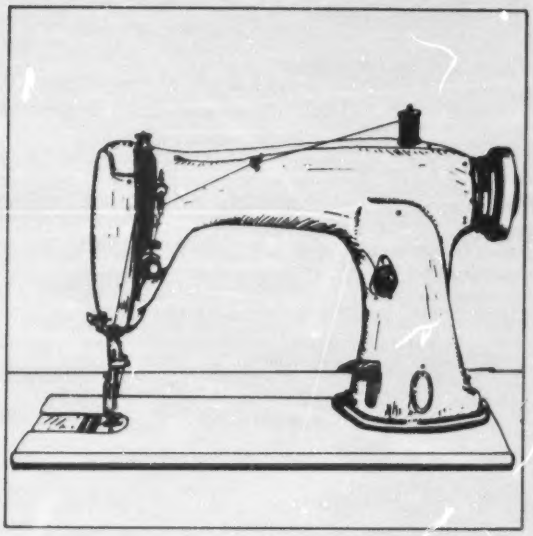
Check the student's performance in the following elements of operating a single needle lockstitch machine (replacing a wound bobbin).

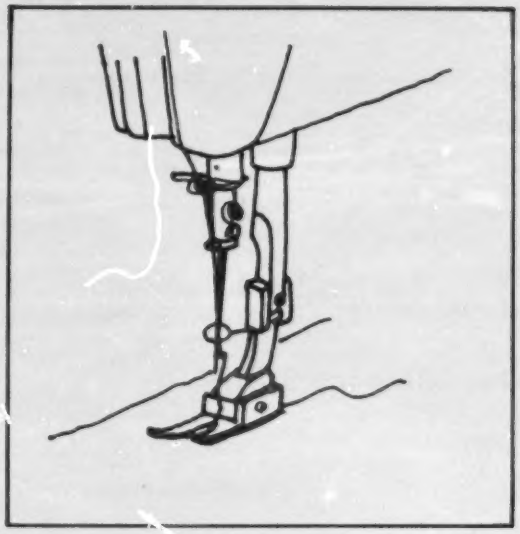
Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
The student:				
a. Secured case.	( )	( )	( )	( )
b. Rotated bobbin freely in counter clockwise direction.	( )	( )	( )	( )
c. Had bobbin and machine threads free and located to rear and under presser foot.	( )	( )	( )	( )

operating the machine





OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE
(Operating the Lockstitch Machine)

INTRODUCTION

The single needle lockstitch machine is a self-oiling machine. The machine sits in a pan of oil which flows continuously through the machine.

The single needle lockstitch machine is power driven at a speed of 3500 to 7000 stitches per minute. It differs considerably from the domestic machine which has a speed of 1500 stitches per minute. The single needle lockstitch machine is the simplest of all industrial machines to operate. In this module you will learn to operate a single needle lockstitch machine.

DIRECTIONS

Read the Objective. If you think that you can accomplish this Objective now, turn to the Check-Out Activity and follow the instructions.

If you feel you are not able to accomplish this Objective now, look at the Learning Activities. Begin the Learning Activities and as soon as you feel you are ready, turn to the Check-Out Activity and follow the instructions.

OBJECTIVE

Given a single needle lockstitch machine, paper, thread, and material, operate machine. Stitches must appear the same on both sides of the material. Material must be stitched straight and machine controlled at will.

LEARNING ACTIVITIES

1. READ Student Information, OPERATING THE LOCKSTITCH MACHINE. Follow directions and complete each step before going on to the next one. If you should have a problem, ask your instructor for assistance. Practice operating the machine until stitches appear the same on both sides of the material.
2. COMPLETE Student Self-Check, OPERATING THE LOCKSTITCH MACHINE.
3. TURN to the Check-Out Activity and follow the instructions.

STUDENT INFORMATION

Operating the Lockstitch Machine[1]

As an operator your goal is to learn to control your machine.

1. Start and stop the machine when you wish.
2. Feed material or paper evenly and efficiently.
3. Use the machine to full capacity.

Your instructor may want you to begin to learn to control your machine by practicing feeding material into an unthreaded machine.

Caution! Do not operate the machine if the presser foot is down unless you are feeding something into the machine.

Follow these steps to learn to control your machine.

1. Place your left foot toward the front of the treadle while your right foot is toward the back edge of the treadle. To start the machine press down on the treadle with the right foot. Stop the machine with the left foot.

   Optional placement of feet: Place both feet on treadle equally. To start the machine press down on the treadle with toe of both feet. Stop the machine with heel pressure on back of treadle with both feet.

2. Turn on the switch. Have your feet in a braking position.

3. Raise the presser foot by applying enough pressure on the knee lifter to insert paper/material under the presser foot.

   Caution! Do not try to insert material unless the needle is at the top of its stroke.

4. Release pressure on knee lifter. The material should be tightly grabbed by the presser foot and feed dog.

5. Start machine by applying pressure on the treadle.
6. Feed paper or material and guide it in a straight line.
7. Stop the machine about one inch (2.54 cm) from the end of the paper.
8. Apply pressure to the knee lifter to raise the presser foot. Practice until you can stop the machine so that the needle will be at the top of its stroke. The take-up lever should also be in the "up" position.
9. Thread the machine and insert a filled bobbin. Practice stitching until stitches are straight and appear the same on both sides of the fabric. See Figure 15 for perfectly formed stitches.

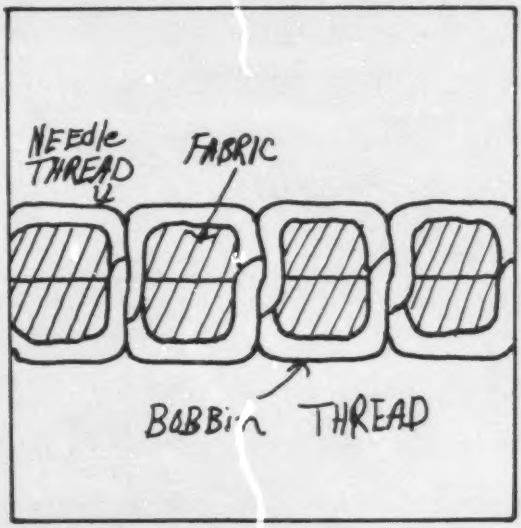


Figure 15

[1]Charles Walcoff, Industrial Needle Trades, (New Brunswick, NJ: Vocational Technical Curriculum Laboratory, Rutgers, 1977).

If the tension of the needle thread is too tight, the needle thread will lie on the surface and you can see the bobbin thread (Figure 16).

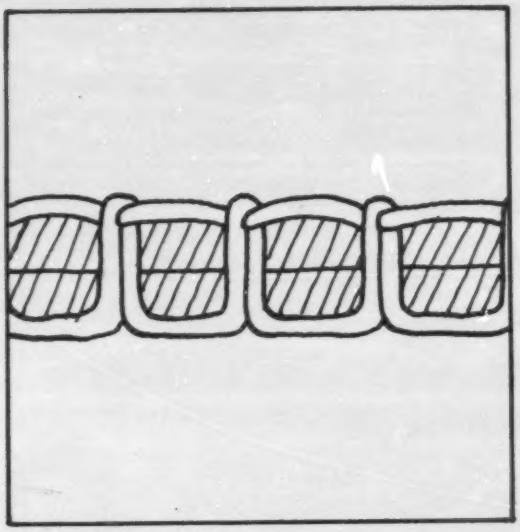


Figure 16

If the tension of the needle thread is too loose or the bobbin too tight, the bobbin thread will lie on the surface of the underside. The top thread will be visible between the stitches (Figure 17).

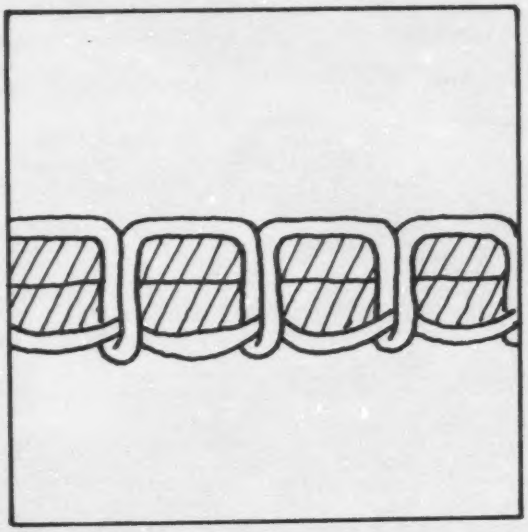


Figure 17

10. In normal sewing operations, your left hand is used to move the bulk of the material in the direction and at the same speed as the machine is sewing. The right hand is used to feed material into the needle and to keep the material taut in its movement to the needle (Figure 18).

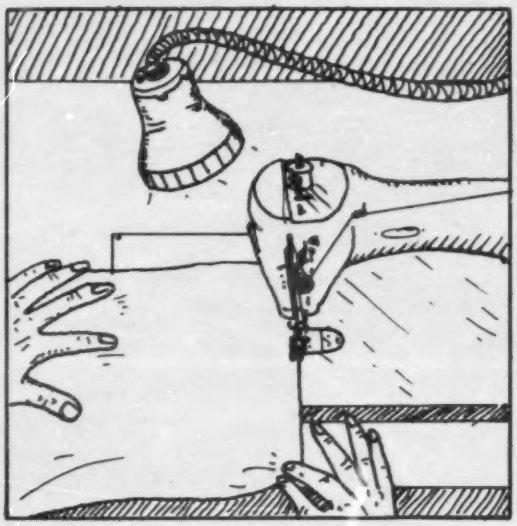


Figure 18

11. Proper posture at the machine is necessary to prevent fatigue. Sit up straight in your chair. Make certain the chair is the best height for you so that you do not strain as you place your feet on the treadle to start and stop the machine.

STUDENT SELF-CHECK

Operating the Lockstitch Machine

Write the answers to the following statements on a separate sheet of paper.

1. Machine is turned on after it is correctly threaded. (True or false)

2. The_____ is used to release thread and allow material to be inserted under the presser foot.

3. Students practice by placing cloth under presser foot to learn control of the machine. (True or false)

4. If machine and bobbin are properly threaded, the stitching will be the_____ on both sides of the material.

5. Both hands are used in positioning the maaerial to the machine. (True or false)

6. Proper posture keeps operator from becoming_____.

CHECK-OUT ACTIVITIES

The statement below explains the activities you must be able to complete in order to finish this module. After you go through the activities, your instructor will rate your performance using the Instructor's Final Checklist, OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE (Operating the Lockstitch Machine).

Your instructor will provide you with a single needle lockstitch machine, owner's manual, thread, and material. Operate the machine properly.

Student _____

Date _____

Instructor's Final Checklist

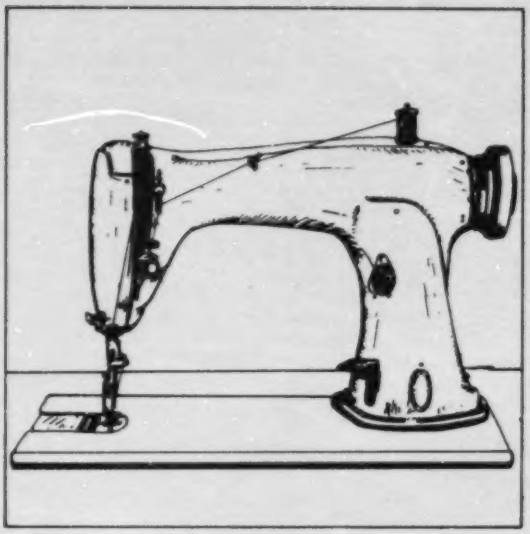
Check the student's performance in the following elements of operating a single needle lockstitch machine (operating the machine).

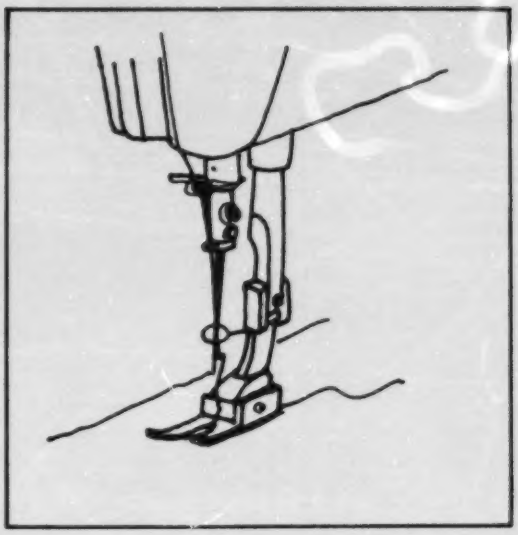
Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
The student:				
a. Had stitches appear the same on both sides of the material.	( )	( )	( )	( )
b. Started and stopped the machine at will.	( )	( )	( )	( )
c. Guided material evenly and stitched straight.	( )	( )	( )	( )
d. Used both hands in addressing the material to the needle.	( )	( )	( )	( )
e. Practiced proper posture.	( )	( )	( )	( )

tying on thread





OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE

(Tying On Thread)

INTRODUCTION

The single needle lockstitch machine is a self-oiling machine. The machine sits in a pan of oil which flows continuously through the machine.

The single needle lockstitch machine is power driven at a speed of 3500 to 7000 stitches per minute. It differs considerably from the domestic machine which has a speed of 1500 stitches per minute. The single needle lockstitch machine is the simplest of all industrial machines to operate. In this module you will learn to operate a single needle lockstitch machine by learning to tie on thread for continuous operation.

DIRECTIONS

Read the Objective. If you think that you can accomplish this Objective now, turn to the Check-Out Activity and follow the instructions.

If you feel you are not able to accomplish this Objective now, look at the Learning Activities. Begin the Learning Activities and as soon as you feel you are ready, turn to the Check-Out Activity and follow the instructions.

OBJECTIVE

Given a thread color change for an operation, tie on the new thread. The knot should be a secure square knot so that thread ends do not separate. The thread should follow the prescribed threading path.

LEARNING ACTIVITIES

1. READ Student Information, TYING ON THREAD. Follow directions and complete each step before going on to the next one. If you should have a problem, ask your instructor for assistance. Practice tying on thread until you can tie on correctly and without assistance.

2. COMPLETE Student Self-Check, TYING ON THREAD.

3. TURN to the Check-Out Activity and follow the instructions.

STUDENT INFORMATION

Tying on Thread

1. Remove near-spent or different color thread cone from stand.

2. Pull thread from cone.

3. Cut thread near cone.

4. Place new thread spool on thread stand.

5. Pull thread from new spool.

6. Tie new and old thread ends securely together in a square knot (Figure 19).

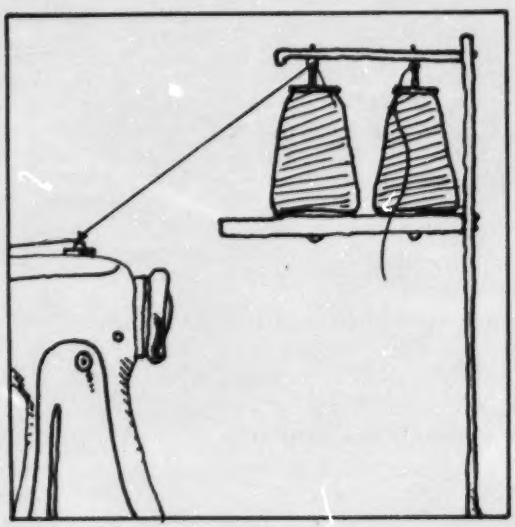


Figure 19

7. Clip leftover threads near the square knot.

8. Raise knee lifter to release top tension.

9. Pull original thread, knot, and new thread through machine head guide and eye of needle.

10. Because the knot usually cannot pass through the needle, cut original thread off at the knot. Rethread needle and replace under presser foot.

11. Resume sewing.

NOTE: The instructor may demonstrate the procedure for a weaver's knot or a "granny" knot instead of the square knot.

STUDENT SELF-CHECK

Tying on Thread

Write the answers to the following statements on a separate sheet of paper.

1. Changes in thread (either new color or near-spent thread) can not be accomplished without rethreading the machine. (True or false)

2. The thread should be cut near the cone. (True or false)

3. To connect the ends of the old and new threads, a square knot should be made. (True or false)

4. The _____ is raised to release top tension.

5. To rethread with new color, pull tied thread through machine to needle and clip. (True or false)

CHECK-OUT ACTIVITIES

The statement below explains the activities you must be able to complete in order to finish this module. After you go through the activities, your instructor will rate your performance using the Instructor's Final Checklist, OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE (Tying on Thread).

Your instructor will provide you with a single needle lockstitch machine, thread, and material. Tie on the thread as explained.

Student _____

Date _____

Instructor's Final Checklist

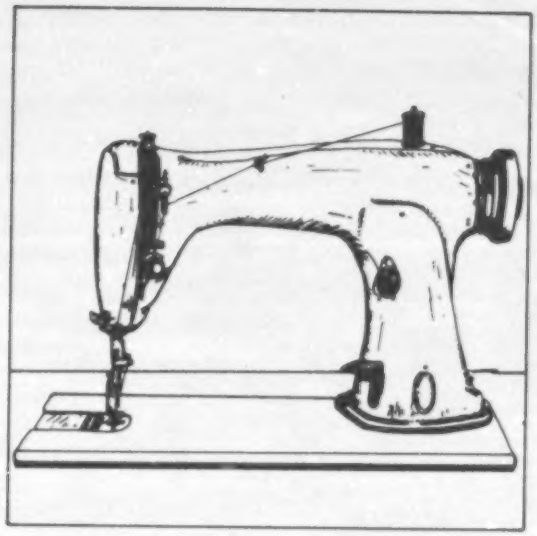
Check the student's performance in the following elements of operating a single needle lockstitch machine (tying on thread).

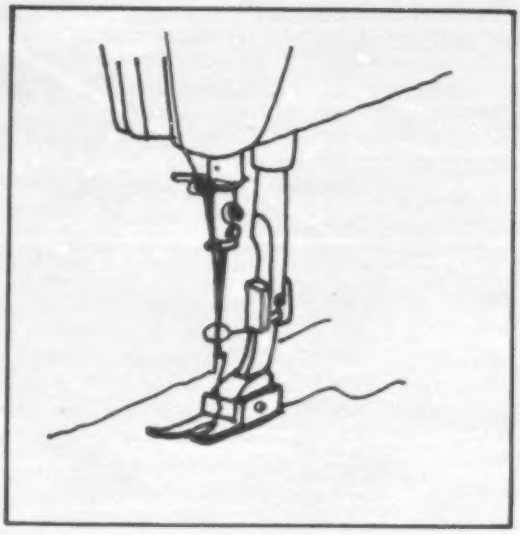
Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
The student:				
a. Used square knot.	( )	( )	( )	( )
b. Secured threads.	( )	( )	( )	( )
c. Followed prescribed threading path with thread.	( )	( )	( )	( )

measuring with gauge/ruler





OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE
(Measuring with Gauge and Ruler)

INTRODUCTION

The single needle lockstitch machine is a self-oiling machine. The machine sits in a pan of oil which flows continuously through the machine.

The single needle lockstitch machine is power driven at a speed of 3500 to 7000 stitches per minute. It differs considerably from the domestic machine which has a speed of 1500 stitches per minute. The single needle lockstitch machine is the simplest of all industrial machines to operate. In this module you will learn to operate a single needle lockstitch machine using a seam gauge.

DIRECTIONS

Read the Objective. If you think that you can accomplish this Objective now, turn to the Check-Out Activity and follow the instructions.

If you feel you are not able to accomplish this Objective now, look at the Learning Activities. Begin the Learning Activities and as soon as you feel you are ready, turn to the Check-Out Activity and follow the instructions.

OBJECTIVE

Given a single needle lockstitch machine and a seam gauge, measure the seam with a ruler and set the gauge for a 3/8 inch seam.

LEARNING ACTIVITITES

1. READ Student Information, MEASURING WITH GAUGE AND RULER.

2. View a teacher demonstration on measuring a seam and setting a gauge.

3. COMPLETE Student Self-Check, MEASURING WITH GAUGE AND RULER.

4. TURN to the Check-Out Activity and follow the instructions.

STUDENT INFORMATION

Measuring with Gauge and Ruler

In order to accurately measure a seam width, the operator uses a seam gauge that is set for the garment specifications. There are two types of seam gauges, "T" gauge and cloverleaf or three-cornered edge gauge.

The "T" gauge serves as a guide for the operator to line up the edge of the fabric. It is up to the operator to feed the fabric into the machine so that the edge is aligned with the wall of the gauge. This gauge allows only for sewing straight seams (Figure 20).

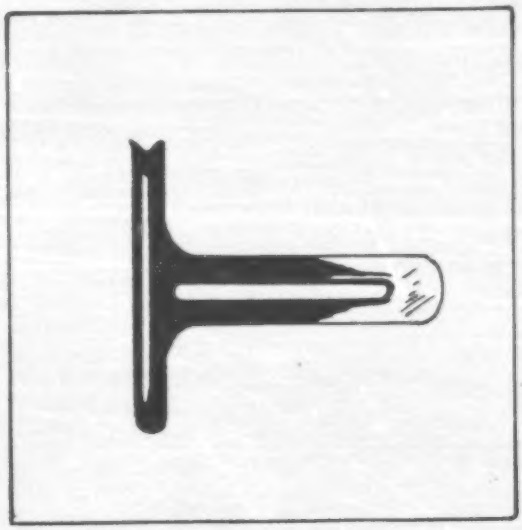


Figure 20

The cloverleaf or three-cornered edge gauge is used when seaming a curved seam allowance as well as a straight seam. Examples of curved seams are at the bust line and sleeving (Figure 21).

Figure 21

Both types of seam gauges are attached to the machine bed by a thumb screw. This screw holds the gauge securely in place (Figure 22).

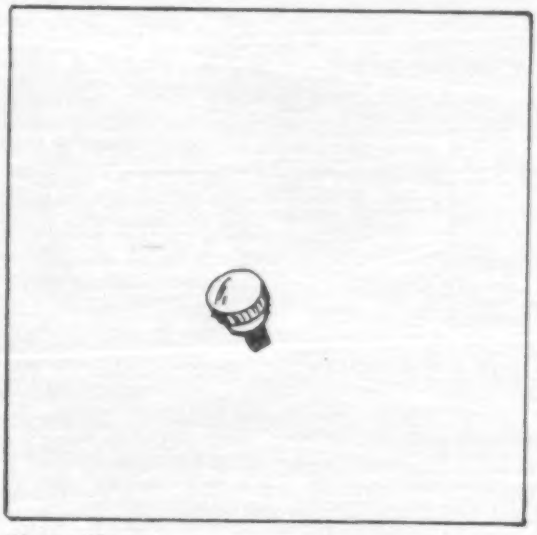


Figure 22

In most industries, the supervisor has the responsibility for setting the seam gauge according to specifications. The operator may be required to set the gauge or check for accuracy.

To set either type of seam gauge, use a ruler to measure the distance from the needle, not the presser foot. Mark the seam width and attach the gauge to the specified size seam. Secure gauge in place and sew.

Most seams are set at 3/8 inch, 1/2 inch, and 5/8 inch. See Figure 23 for the divisions on a ruler. The measurements are enlarged for the illustration.

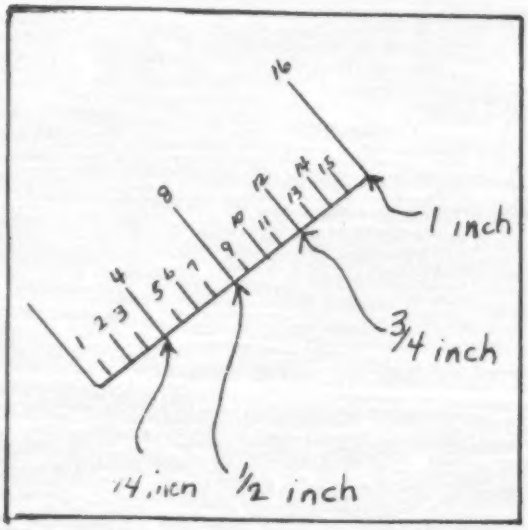


Figure 23

The smallest divisions on a ruler are sixteenths. In order to know how many sixteenths are in 3/8 inch (.95 cm), 1/2 inch (1.27 cm), or 5/8 inch (1.59 cm), the following mathematical equation is used.

One inch on a ruler may be considered as different fractions such as 4/4, 2/2, 16/16, or 8/8. In order to understand the seam widths, the fractional parts of the ruler are important.

A common fraction is expressed as a whole number divided by a non-zero whole number. The one above the line is called the numerator; the one below the line is called the denominator.

¼ means 1 (is the numerator)
4 (is the denominator)

A fraction can be changed by multiplying or dividing by the same whole number.

EXAMPLE 1

$$\frac{3}{4} = \frac{?}{16}$$

Divide the denominator of the given fraction into the denominator of the unknown fraction.

$$16 \div 4$$

This determines the whole number divider so that,

$$\frac{3 \cdot 4}{4 \cdot 4} = \frac{12}{16}$$

EXAMPLE 2

$$\frac{8}{16} = \frac{?}{2}$$

Divide the denominator of the given fraction by the denominator of the unknown fraction.

$$16 \div 2$$

This determines the whole number divider so that,

$$\frac{8 \div 8}{16 \div 8} = \frac{1}{2}$$

STUDENT SELF-CHECK

Measuring with Gauge and Ruler

Write the answers to the following statements on a separate sheet of paper.

1. The two typns of seam gauges are the "T" gauge and the_____gauge.

2. The cloverleaf gauge can be used for straight seams and curved seams. (True or false)

3. To understand how to set a gauge for stitching the correct width of a seam, the operator must know the fractions of an inch. (True or false)

4. In industry, the operator always sets the seam gauge. (True or false)

CHECK-OUT ACTIVITIES

The statement below explains the activities you must be able to complete in order to finish this module. After you go through the activities, your instructor will rate your performance using the Instructor's Final Checklist, OPERATING A SINGLE NEEDLE LOCKSTITCH MACHINE (Measuring with Gauge and Ruler).

Your instructor will provide you with a single needle lockstitch machine, machine gauge, ruler, thread, and material. Measure for a 3/8 inch (.95 cm) seam, set the gauge, and complete the seam correctly.

Student _____

Date _____

Instructor's Final Checklist

Check the student's performance in the following elements of operating a single needle lockstitch machine (measuring with gauge and ruler).

Place an X in the appropriate box indicating not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the "Not Applicable" box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and instructor will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
The student:				
a. Secured the cloverleaf seam gauge to the machine bed.	( )	( )	( )	( )
b. Secured the "T" seam gauge to the machine bed.	( )	( )	( )	( )
c. Demonstrated the setting of either gauge to 3/8 inch (.95 cm).	( )	( )	( )	( )